

Remarks:

These remarks are responsive to the Office action dated November 5, 2008. Prior to entry of this response, claims 1-5 and 7-50 were pending in the application. By way of this response, claims 1, 33, and 41 are amended. Applicant respectfully requests reconsideration of the application and allowance of the pending claims.

Preliminary Matters

Initially, Applicant thanks the Examiner for continued diligent examination of the application, and appreciates the attention the Examiner has paid to this lengthy application with its numerous claims.

Regarding the various Official notices made in Par. 0007 and other sections of the Office action mailed November 5, 2008, and the previous Office action, Applicant traverses each one, and also traverses the conclusions reached regarding obviousness based on these Official notices. Applicant's specific remarks in support of patentability of the pending claims are offered below.

Formal Matters

Applicant has amended claim 33 to correct a typographical error. As this amendment adds no new matter to the application, Applicant respectfully requests it be entered.

Rejections under 35 U.S.C. § 101

Claims 1-5 and 6-40 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. While Applicant understands that these rejections have likely been made in view of revised USPTO examination practices following the *In re Bilski* decision, Applicant respectfully submits that all of the methods described and claimed herein are computer-implemented, and that real-world input occurs, transformative processing of the input occurs, and results of the processing are outputted. Such methods remain patentable subject matter after *In re Bilski*. Nevertheless, various amendments to the claims have been made to further clarify that

the claimed methods are implemented on particular computing devices. On this basis, Applicant respectfully requests that the rejections be withdrawn.

Rejections under 35 U.S.C. § 103

Applicant offers the following summary of the status of the claims.

Claims 1-5, 7-26, and 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over “A Stochastic Model of Supermarket Traffic Flow,” published 1966 (Farley et al.) in view of U.S. Patent No. 6,563,423 (Smith).

Claims 27-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farley et al. and Smith as applied above and further in view of “Tracking Shoppers Through the Combination Store,” published 1988 (Heller).

Claims 41-45 and 48-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith.

Claims 46-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Smith as applied to claim 41 above and further in view of U.S. Patent No. 5,729,697 (Schkolnick et al.).

Turning to the rejection of claim 1, the Examiner asserts as follows.

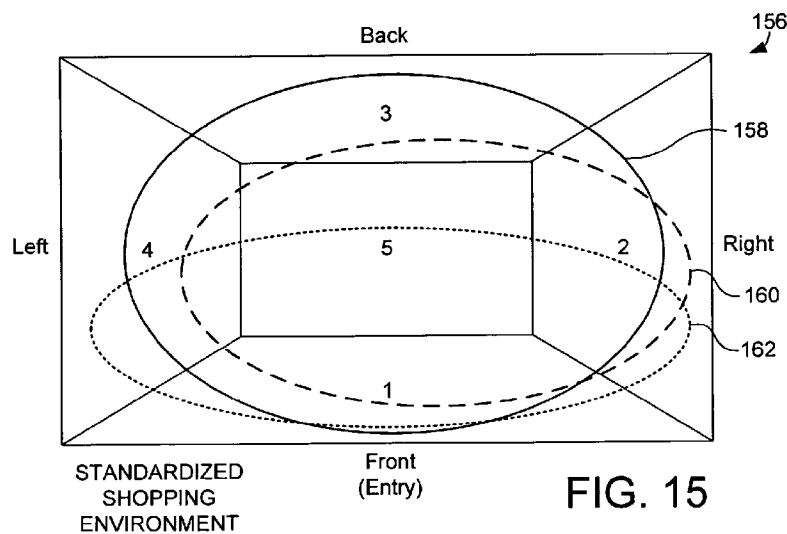
light of Applicant's arguments support for the reject is still available in the prior art. The Applicant asserts that “Farley teaches away from analyzing shopper in a way other than by first considering the location of a product”, see page 17-18 of the remarks.

Examiner notes that the underlying premise of Farley's disclosure is a common physical frame see page 555 “the influence of store layout, since a more comprehensive model requires an understanding of traffic flow as well as the effects of other variables superimposed on a given layout (common physical frame).” It is old and very well known in the art that will there are infinite possibilities for a store layout; there are a standard few that are generally used for example, racetrack, grid, and free from.

Examples of layouts are given in the previously cited Heller article, see pages 48-49.

Therefore any theories or predictions made by Farley are rooted in the given layout analysis (spatial analysis).

In response, claim 1 has been amended to clarify that the paths of shoppers in a plurality of different shopping environments having different sizes and shapes are tracked to produce the shopper path data, and the shopper path data is then normalized according to a normalization function, to thereby produce for the paths from the different shopping environments. A statistical measure is then calculated from the normalized path data from the different stores, and an output is made. Support for these amendments is provided in Fig. 1, and throughout the specification. One potential advantage of such a configuration is that data from multiple stores can be compared to each other, in a common physical frame of reference, and further data from all or a group of stores may be aggregated into the common physical frame of reference. This may be used, for example, to produce a measure as shown in Fig. 15, reproduced below.



As described in Par. 0077 of the subject application, “ellipse 158 represents a best fit ellipse encompassing the predetermined percentage of detected visiting behavior, ellipse 160 represents a best fit ellipse encompassing the predetermined percentage of detected shopping behavior, and ellipse 160 represents a best fit ellipse encompassing the predetermined percentage of detected purchasing behavior. From the different shapes of the ellipses, it can be determined that shoppers widely visit the store, slow down and shop towards the middle-front of the store, and concentrate purchasing activity to the front of the store.” Applicant presents this example to the Examiner not to argue that these

limitations should be imported into the claims, but rather as an example of an advantageous statistical result that may be produced by the claimed method.

In contrast, Farley does not address normalization of shopper paths from differently shaped stores, and as such the teachings of Farley could not possibly achieve such advantageous results as are shown above in Fig. 15. Rather, Farley deals with “the problem of trying to predict traffic flows based on the physical characteristics of a store.” (Farley, Page 556). Surely, the methods Farley describes can be applied to different stores with different layouts, as the Examiner quite correctly asserts. However, a key difference, and indeed the very point of Applicant’s patent application, is that Applicant’s claimed methods enable data to be normalized so that it may be aggregated and compared across multiple stores.

To illustrate the difference, if a statistician desired to use the teachings of Farley to analyze shopping patterns for a store layout, the statistician might select a store with a given layout, and then analyze shopper patterns within that store. For a different store, a new study would be conducted, and new shopper path data gathered for analysis. In contrast, Applicant’s claimed invention enables shopper path data from multiple different stores to be normalized and then combined in a common physical frame of reference, and in some dependent claims, in a common time frame of reference. This is powerful, as it enables cumulative learning, since over time the results of successive shopper studies may be combined and combined again building a larger database of statistical data that can be mined to reveal how shoppers shop not just at one store during one particular shopping study, but over time across stores throughout the entire nation, if desired. The conceptual jump from the teachings of Farley and the remaining cited references and Applicant’s claimed invention is quite a large one, and its implications are meaningful for the shopping research industry.

Despite these differences, the Examiner has rejected claim 1 based on Farley and Smith in combination with Official notice, stating in part as follows:

While neither Farley nor Smith expressly teaches a common physical frame of reference official notice is taken that the statistical technique of scaling (standardizing) to a common physical frame of reference, thus allowing for an apples to apples

comparison was an old and well known technique used in analyzing statistical data. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the old and well known techniques of scaling (standardizing) to a common physical frame of reference in the analysis of data collected in the disclosure of Farley to allow for a higher order probability model (Farley 567).

Applicant traverses the above Official notice and the rejection for which it forms a basis. To the best of Applicant's knowledge, prior to Applicant's present invention, no one in the history of statistical shopping analysis had attempted to aggregate shopper path data from multiple differently shaped stores, in the claimed manner. The Examiner's bare assertion that techniques for normalization of various data were well-known, does not render obvious the claimed method of normalizing shopper path data gathered from different shopping environments of different shapes and sizes to a common physical frame of reference, and calculation of a statistical measure based on normalized path data.

Attempting to compare shopper path data from differently shaped stores presented Applicant several challenges. First, Applicant had to conceive that it was a productive undertaking to attempt. Since stores are shaped differently, have different fixtures and different layouts, it was not clear to Applicant that comparison of path data from differently shaped stores would lead to meaningful shopping statistics. It was unpredictable whether such a comparison would have useful results, or would simply be an apples-to-oranges comparison. Some stores might be rectangular, some square, and some have complex or curved shapes. Their entrances and fixtures might be in different locations. If one laid the store layouts of different stores one on top of the other, popular shopping areas in one store might be blocked and impassible in another. How would aggregating data from such different stores be useful?

Applicant launched into such problems headlong, and persevered and experimented with various mechanisms to compare such data from different stores. Applicant eventually realized that if one normalized the data to a common physical frame of reference, by mapping the stores of various different shapes to a common map, without accounting for the differences in internal layouts between each store, one could generate meaningful statistical measures, such as described above in Fig. 15.

As discussed above, the ability to make such comparisons has powerful implications for the shopping research industry, as shopper path data may be aggregated over time from studies conducted in widely different physical shopping environments, for study and analysis.

Regarding Smith, the features described above as lacking in Farley are likewise not taught by Smith. Smith merely relates to a system for tracking persons using sensors in footwear. Smith does not disclose any manner of normalizing path data from such tracking of shoppers in shopping environments of different sizes and shapes, nor producing statistical measures based on any such normalized data. The remaining prior art of record, including Heller and Schkolnick, also fail to disclose this combination of features.

For these reasons, Applicant submits that the set of claimed features of claim 1 is the very type of inventive contribution that the patent system was designed to protect, and not the type of innovation that one of ordinary skill the art, even if armed with the knowledge taught by Farley and Smith, would attempt to undertake.

In view of the above, Applicant respectfully submits that the rejection of amended claim 1 based on the combination of Farley and Smith under 35 U.S.C. 103 should be withdrawn, since the cited combination fails to disclose or suggest each and every limitation of the claim. Claims 2-5 and 7-40 depend from claim 1, and are also believed to be in condition for allowance based on the amendments to claim 1. Applicant requests that the rejection of these claims under 35 U.S.C. 103 be withdrawn.

Regarding claim 41, Applicant has amended claim 41 in a manner consistent with the amendments made to claim 1, to further clarify that the system includes a normalization module that is configured to convert shopper path data gathered from a plurality of shopping environments of different shapes and sizes to a common time frame of reference and a common physical frame of reference, to thereby produce normalized path data based on the path data from the plurality of shopping environments of different shapes and sizes, based on which the statistical calculation module may compute a statistical measure. In view of these amendments, for the reasons discussed above with respect to claim 1, Applicants respectfully submit that claim 41, and dependent claims 42-50, are not rendered obvious by the cited reference Smith, nor the combination of

Smith with Schkolnick, and request that the rejection of these claims under 35 U.S.C. 103 be withdrawn.

Conclusion

Applicant believes that this application is now in condition for allowance, in view of the above amendments and remarks. Accordingly, Applicant respectfully requests that the Examiner issue a Notice of Allowability covering the pending claims. If the Examiner has any questions, or if a telephone interview would in any way advance prosecution of the application, please contact the undersigned attorney of record.

Please charge any cost incurred in the filing of this response, along with any other costs, to Deposit Account No. 503397. Applicant files herewith a notice indicating that it is no longer entitled to small entity status. Therefore, all fees are authorized to be deducted at the large entity rate.

Respectfully submitted,

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